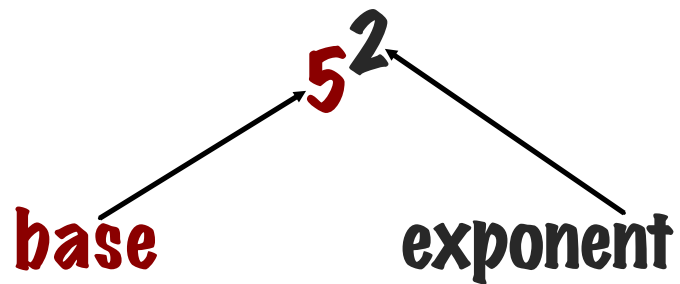




## **1.2 Exponents & Powers**



What does  $5^2$  mean?  $5 \cdot 5$

What does  $y^{13}$  mean?  $y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y$

What does  $a^2b^7$  mean?  $a \cdot a \cdot b \cdot b \cdot b \cdot b \cdot b \cdot b$

**Exponential Form:**

$x^1$

$10^2$

$4^3$

$A^8$

**Words:**

$x$  to the 1<sup>st</sup> power

10 squared

4 cubed

$A$  to the 8<sup>th</sup> power

Evaluate powers when  $x = 8$ ,  $a = 3$ , &  $b = 4$

1.  $x^2$

2.  $(a + b)^3$

3.  $a + b^3$

$$\begin{aligned} & 3 + 4^3 \\ & 3 + 64 \\ & 67 \end{aligned}$$

**Evaluate when  $x = 5$**

**4.  $3x^2$**

$$3 \cdot 5^2$$

$$3 \cdot 25$$


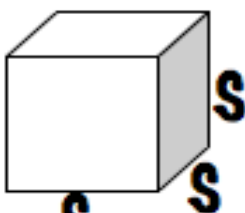
$$75$$

**5.  $(3x)^2$**

$$(3 \cdot 5)^2$$

$$(15)^2$$

$$225$$

Area of a square:	Volume of a cube:
 <p style="text-align: center;"><math>s</math></p>	 <p style="text-align: center;"><math>s</math></p>
<p><b>Area = <math>s \cdot s</math> OR <math>s^2</math></b>  <b>Area is measured in square units: <math>u^2</math></b></p>	<p><b>Volume = <math>s \cdot s \cdot s</math> OR <math>s^3</math></b>  <b>Volume is measured in cubic units: <math>u^3</math></b></p>
<p><b>7. Give 2 examples of area in this room.</b></p>	<p><b>8. Give 2 examples of volume in this room.</b></p>

**A tank has the shape of a cube. Each edge is 4.5 feet long. Find the volume and surface area of the tank. Label both answers!**



$$V = 4.5^3$$

$$V = 91.125 \text{ ft}^3$$